AMENDMENTS TO THE CLAIMS

1.-5. (Cancelled)

6.-11. (Cancelled)

12. (Previously Presented)   A linear detector array system for use in a target inspection system for detecting a contents of the target, the linear detector array comprising:

a plurality of vertical rows of staggered detectors including a center vertical row of staggered detectors and one or more side vertical rows of staggered detectors, each of the plurality of vertical rows being vertically staggered from each other vertical row, such that a pitch between any two closest adjacent staggered detectors is smaller than a diameter of the staggered detectors;

a processor comprising an image-generating program, the processor receiving data from each of the one or more side vertical rows and from the center vertical row;

the image-generating program further including:

adjustment means for determining an adjustment for a horizontal displacement k of the one or more side vertical rows from the center vertical row, wherein the adjustment is used to correlate the data from the side vertical rows with data from the center vertical row so as to form undistorted images for multiple planes within the target; and

computing means for determining an image adjustment distance 1 for multiple planes within the target according to a relationship 1=kZ/D, wherein Z is variable and is a distance between a radiation source and each of the multiple planes within the target, and wherein D is a distance between the radiation source and the linear detector array.

13. (Previously Presented) A method for processing staggered detection data for use in a target inspection system, the method comprising the steps of:

providing a plurality of vertical rows of staggered detectors, each of the plurality of vertical rows being vertically staggered from each other vertical row, such that a pitch between any two closest adjacent staggered detectors is smaller than a diameter of the staggered detectors including:

providing a center vertical row of staggered detectors;

providing one or more side vertical rows of staggered detectors;

providing a processor comprising an image-generating program;

receiving data at the processor from each of the one or more side vertical

rows and from the center vertical row;

determining an adjustment for a horizontal displacement k of the one or

more side vertical rows in order to correlate the data from the side vertical rows with data

from the center vertical row so as to form undistorted images for multiple planes within

the target; and

determining an image adjustment distance 1 for multiple planes within the

target according to a relationship $1=kZ/D$, wherein Z is variable and is a distance between

a radiation source and each of the multiple planes within the target, and wherein D is a

distance between the radiation source and the linear detector array.

14. (Previously Presented)   The method of Claim 13, further comprising:

adjusting the data from the one or more side vertical rows and the center

vertical row using the adjustment distance 1 for each of the multiple planes to form

undistorted images for each of the multiple rows; and

comparing the undistorted images for each of the multiple planes to

determine the location of an object within the target.